

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/003667 A1

(51) International Patent Classification⁷: **F27D 11/02**,
H05B 3/66

(21) International Application Number:
PCT/SE2004/001047

(22) International Filing Date: 29 June 2004 (29.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0301970-0 3 July 2003 (03.07.2003) SE

(71) Applicant (for all designated States except US): **SAND-
VIK AB** [SE/SE]; S-811 81 Sandviken (SE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **LEWIN, Thomas**
[SE/SE]; Bergslagsvägen 227 B, S-734 40 Hallstahammar
(SE).

(74) Agents: **ÖRTENBLAD, Bertil** et al.; Noréns Patentbyrå
AB, Box 10198, S-100 55 Stockholm (SE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

WO 2005/003667 A1

(54) Title: A METHOD AND AN ARRANGEMENT FOR SUPPORTING VERTICALLY DEPENDING ELECTRICAL RESIS-
TANCE ELEMENTS.

(57) Abstract: The present invention relates to a method of supporting vertically hanging electrical resistance elements for heating
furnaces or ovens in industrial operation, wherein each element comprises current conducting legs (6) that run downwards and up-
wards a number of times, wherein the resistance element (1) includes along its length a number of ceramic discs (8) that are provided
with through-penetrating holes through which respective element legs extend, wherein the upper part of said element merges with
terminals (5a, 5b) that are connected to a source of electric current, and wherein said element is supported by at least one of the
uppermost ceramic discs. The invention is characterised in that the uppermost ceramic disc or the uppermost ceramic discs (10, 11)
supporting said element is/are placed in the insulation (3) of the furnace roof (2) above the underside (15) of said roof; and in that
legs (6) of the element are caused to be short circuited at a location slightly or somewhat beneath the underside (15) of said furnace
roof with the aid of short circuiting plates (7).